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ABSTRACT

A study analyzed the experience of eight schools that had begun working to integrate their academic and vocational education programs several years before passage of the 1990 Perkins Act amendments. The following common themes were identified as collectively defining integration as a distinct reform effort: (1) richer, better sequenced curricula that enhance academic and generic skills needed by all workers; (2) facilitative instruction that motivates students to learn and provides them with a practical/applied understanding of the world; (3) increased collaboration and coordination among academic and vocational teachers to create a more unified schooling experience; and (4) more attention to the skills and knowledge students need to make an effective transition from school to work and college. The study also demonstrated that integration can apply to all high schools, should be approached as a school improvement effort, flourishes in a permissive regulatory environment, can take years to implement, and complements other current systemic reforms. (MN)

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Integrating Academic and Vocational Education: Lessons from Early Innovators

Since the turn of the century, vocational and academic educational programs in American high schools have grown increasingly separate.[1] Vocational and academic teachers undergo distinct certification processes, and students involved in one strand of education often do not mix with students in the other. In recent years, this separation has come under criticism for many reasons. These reasons include the growing recognition that the workplace of the future will require new and different skills of all workers—including not only job-specific skills but also transferable, generic skills that will help them to acquire further education and training throughout their careers. Thus, strict distinctions between academic and vocational knowledge and skills are becoming blurred.

In 1990, the federal government mandated the "integration" of vocational and academic education through amendments to the Carl D. Perkins Vocational Education Act of 1984. The amendments made funds available "to provide vocational education in programs that integrate academic and vocational education . . . so that students achieve both academic and occupational competencies." As a result, states and localities throughout the nation are undertaking efforts to integrate vocational and academic education.

Unfortunately, little systematic information has been available to help guide integration efforts. To help fill the gap, a recent study conducted by RAND for the National Center for Research in Vocational Education analyzed the experience of eight schools that had begun their integration efforts several years before the Perkins amendments. The study derived important "lessons learned" that can help guide educators and educational policymakers seeking to integrate vocational and academic education.

What does—or can—integration mean?

Since the Perkins amendments do not explicitly define integration, the RAND researchers first set out to determine how educators and previous research defined it. They found that the concept of integration is variously understood. However, they were able to identify four common themes that, taken together, can be said to define integration as a distinct reform effort:

[1] Academic education includes disciplinary courses such as English, history, math, science, foreign language, and fine arts. It prepares students for further education at college. By contrast, vocational education offers students training in occupation-specific skills in preparation for employment or further training after high school graduation.

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- **Richer, better sequenced curricula** that enhance academic and generic skills needed by all workers.
- **Facilitative instruction** (rather than didactic) that motivates students to learn and provides them with a practical and applied understanding of the world.
- **Increased collaboration and coordination among academic and vocational teachers** to create a more unified schooling experience.
- More attention to the skills and knowledge students need to **transition effectively from school to work and college.**

The core of the integration concept is to combine the best curricular and pedagogical practices of academic and vocational education into a single, integrated program that is available to all high school students.

In addition to defining what distinguishes integration from other educational reforms, the researchers also wanted to describe what it has meant operationally in specific school reform efforts. They studied eight schools that had begun to implement integration reforms before the federal mandate. They found that these early innovators differed in their reasons for undertaking integration, in the integration practices that they adopted, and in their implementation experience. By analyzing and comparing the experiences of these early innovators, the researchers derived insights into the themes of integration listed above: curricular and pedagogical reform, teacher collaboration, and school transition.

Curricular and pedagogical reforms

Schools attempted to reform curricula through enhanced course content (academic and vocational knowledge and skills), improved course alignment and interdisciplinary content connections, and emphasis on workplace-related skills and attitudes. The schools also attempted to implement pedagogical reforms that moved teachers away from didactic techniques, such as lecturing, and toward more facilitative techniques, such as coaching, modeling, and project-based learning.

As a major reform, integration requires a great deal of capital building in both the development of appropriate curricular materials and the training of teachers.

Teachers need time, resources, and guidance to develop materials to be used in an integrated curriculum. Some commercially produced curricular materials are available (e.g., "applied academic" materials), but at schools that opted to acquire them, teachers discovered that extensive reworking and supplementation were needed to adapt them to local needs.

Teachers also need to be trained in the use of teaching techniques that support activity-based learning, including hands-on problem-solving, cooperative or team-based projects, lessons requiring multiple forms of expression, and project work that draws on knowledge and skills from several domains. The eight schools studied, for example, used various activities to improve student workplace skills, including internships, senior projects, and development of career plans. Attempts at pedagogical change were impeded by lack of staff development, planning time, and resources.

Schools also reported existing regulations as a major source of barriers to new curricular and pedagogical practices. For example, hiring policies prevented some principals from firing or reassigning teachers who refused to participate in integration. Graduation requirements, college-entry requirements, and seat-time regulations (requiring students to study particular subject areas for a specified amount of time per school day) blocked changes in course alignment, sequencing, and interdisciplinary approaches that would have supported integration.

Teacher collaboration reforms

Schools fostered increased teacher collaboration by forming teams of academic and vocational teachers, providing joint instructional and noninstructional (e.g., planning and observation) time, conducting summer workshops on collaboration, and implementing new organizational structures that empowered teachers.

Schools found that collaboration between academic and vocational teachers takes several years to institutionalize. Not only must integrated curricular materials be developed or adapted, but each teacher must develop the expertise to teach the integrated curriculum to a diverse group of students. Collaboration reform proceeded best when team personnel and course assignments were stable for several years. It was also facilitated by simply providing more physical proximity between academic and vocational teachers.

Collaboration between academic and vocational teachers had the additional benefit of working to overcome the undervaluing of vocational teachers and students that is common in secondary education. Academic teachers gained respect for their vocational colleagues through participation in integrated programs.

Lack of funds was the biggest barrier to fostering teacher collaboration. Attempts at collaboration take a great deal of time and effort on the part of teachers. Teachers are in effect asked to retrain themselves as a workforce over the course of years, often without additional compensation. Collaboration efforts benefitted when schools invested in teachers' capital building—for example, by providing training opportunities, two-week summer periods for team building, and noninstructional time during the school year for collaboration. When funds were lacking or diminished, teachers reduced their efforts. Even where enthusiasm and commitment were initially strong, a lack of funding eventually led to teacher resentment and burnout and was interpreted by teachers as a signal from administrators that integration was not really considered important.

School transition reforms

School transition reforms focused on improving the transition from high school to the workplace and college. School transition reforms included the use of parents and businesses as planning partners with the school, curriculum designed specifically to support transition (e.g., occupational clusters, employability courses, career-oriented materials), articulation agreements with local colleges, provision of other school services to support integration (e.g., career exploration), and credentials and certification.

Creating and implementing school transition reforms potentially affect many aspects of the schools: guidance counseling, tracking practices, credentialing requirements, and community relations. Of the schools studied, those that enjoyed a large measure of local autonomy were better able to integrate school transition practices with school operations, services, and curricula, making transition a central element of schooling.

Lessons for integration reform

The study derived several general conclusions to guide those attempting to integrate vocational and academic education programs:

- **Integration can apply to all high schools.** Although the federal legislation applies only to vocational programs receiving Perkins funds, integration is potentially a reform that can be undertaken by all types of schools and for students with varying backgrounds and aspirations. It should not be viewed as applying only to vocational programs. Several of the early innovators were mission schools that served primarily college-bound students.
- **Integration should be approached as a school improvement effort.** Integration touched on all aspects of the school—curriculum, pedagogy, organization, relationship to the community. Because of its potential to change the school in fundamental ways, it should be viewed as a means to organize and focus a school improvement effort. The eight early innovators differed in the focus of their school improvement efforts: Three schools implemented integration primarily to enhance the academic content of vocational courses. Three other schools sought to increase the vocational relevance of their academic programs. Two schools used integration reform primarily to improve motivation of both academic and vocational students.

- **Integration flourishes in a permissive regulatory environment.** Integration efforts proceed better when state and local regulations support or at least do not impede local reforms. Common barriers include seat-time regulations, graduation requirements, nonacceptance of applied courses, college admission requirements, union seniority rules, certification processes, and teacher evaluation rules. Strict allocation of resources by a central office can also inhibit integration if it reduces a school's ability to channel funds toward teacher professional development.
- **Integration can take years to implement.** The broad consensus among the early innovators was that reform would not be complete—or advanced enough to permit an assessment of its effects—for at least five years. Such a long-term endeavor needs committed leadership, relatively stable staffing, and stable and generous funding to induce change and build new capacities. Most important are full support for continuing staff development and collaboration.
- **Integration complements other current systemic reforms.** Integration reform is consonant with calls for site-based management, mission-oriented schooling, increased teacher participation in decisionmaking, and reforms to increase teacher professionalism and collegiality and improve pedagogy.

All in all, integration reform appears to promote a healthy rethinking of education conventions. Given sufficient support to succeed, the integration reform movement has the potential to create a much more flexible, equitable, and effective American high school.

RAND policy briefs summarize research that has been more fully documented elsewhere. This policy brief describes work done for the National Center for Research in Vocational Education (NCRVE), University of California, Berkeley, in RAND's Institute on Education and Training. This work is documented in Integrating Academic and Vocational Education: Lessons from Eight Early Innovators, *Susan Bodilly, Kimberly Ramsey, Cathleen Stasz, and Rick Eden, R-4265-NCRVE/UCB, 1993, which is available from RAND Distribution Services, 310-451-7002.*

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